

## REMARKS

The Examiner is thanked for the thorough examination of the above-referenced patent application. Claims 1-17 remain pending in the application. Independent claims 1 and 8 have been amended. Support for the foregoing amendments may be found throughout the written description, drawings and claims, as originally filed.

Applicant has thoroughly reviewed the outstanding Office Action including the Examiner's remarks and the references cited therein. The Examiner is respectfully requested to reconsider and withdraw the rejections in view of the amendments and remarks contained herein.

## REJECTION UNDER 35 U.S.C. § 102

Claims 1-3, 5-10, 12-14, 16 and 17 were tentatively rejected under 35 U.S.C. § 102(e) as allegedly anticipated by Zheng et al. (US 6,762,085).

Claims 1-3, 5-10, 12-14, 16 and 17 are rejected under 35 U.S.C. § 102(e) as allegedly anticipated by Roy et al. (US 6,777,298). As amended, independent claims 1 and 8 clearly define over the cited art of record.

“A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). “The identical invention must be shown in as complete detail as is contained in the ... claim.” *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). (MPEP 2131)

(*Emphasis added.*)

With particular reference to *Zheng*, the cited reference teaches the formation of “L” shaped silicon oxide spacer 4b and 4c over the substrate 1 and the gate structure 3.

Then, a halo region 7 is formed in the substrate 1. According to this cited reference, NO etching process is performed before the halo region 7 is formed, thereby reducing the thickness of the lateral silicon oxide spacer 4b.

With particular reference to *Roy*, the cited reference teaches to implant ion at a tilt angle between about 10 to 30 degree (column 4, line 12 to 15). Therefore, in this cited reference, the liner area 20a and 20b does not be used as a mask when performing ion implantation to form halo regions 28a and 28b.

In contrast to the foregoing cited reference, in the amended claimed invention, before performing an ion implantation to form halo region 360, the liner 340 is etched to reduce its thickness first. Then, the etched liner is used as a mask to perform the ion implantation. The invention defined by the amended claims 1 and 8 is contrary to the teachings in the prior art. This is reflected in amended claims 1 and 8 (as emphasized below):

1. A method of fabricating a MOSFET device, comprising:  
forming a gate on a substrate, said gate comprising a gate dielectric layer and a conductive layer;  
forming a liner on the sidewall of said gate;  
performing a first-type ion implantation, using said gate and said liner as a mask, to form a source/drain region outside of said gate in the substrate;  
***etching said liner to reduce the lateral thickness of said liner on the sidewall of said gate; and***  
***performing a second-type ion implantation, using said gate and the etched liner as a mask, to form a halo region surrounding said source/drain region.***

8. A method of fabricating a MOSFET device, comprising:  
forming a gate on a substrate, said gate comprising a gate dielectric layer and a conductive layer;  
forming a liner on the sidewall of said gate;  
performing a first-type ion implantation, using said gate and said liner as a mask, to form source/drain regions outside of said gate in the substrate;

***etching said liner on one sidewall of said gate to reduce the lateral thickness of said liner; and  
performing a second-type ion implantation, using said gate and the etched liner as a mask, to form a halo region surrounding one of said source/drain regions adjacent to the etching side.***

*(Emphasis added.)*

Accordingly, Applicant respectfully submits that independent claims 1 and 8, as amended, clearly define over the art of record and respectfully requests the anticipation rejection of claims 1 and 8 to be reconsidered and withdrawn. In addition, insofar claims 2-7 and 9-17, ultimately depend from claims 1 and 8, and add further limitations thereto, the rejections of these claims should be withdrawn as well.

Reconsideration and withdrawal of this rejection is respectfully requested.

#### **REJECTION UNDER 35 U.S.C. § 103**

When applying 35 U.S.C. 103, the following tenets of patent law must be adhered to:

- (A) The claimed invention must be considered as a whole;
- (B) The references must be considered as a whole and must suggest the desirability and thus the obviousness of making the combination;
- (C) The references must be viewed without the benefit of impermissible hindsight vision afforded by the claimed invention; and
- (D) Reasonable expectation of success is the standard with which obviousness is determined.

*Hodosh v. Block Drug Co., Inc.*, 786 F.2d 1136, 1143 n.5, 229 USPQ 182, 187 n.5 (Fed. Cir. 1986).

Claim 15 was rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over *Zheng et al.* (US 6,762,085) in view of *Yu et al.* (US 20030222298). Claim 15 depends from the amended claim 8 and adds further limitations thereto.

As stated above, the amended claim 8 patently defines over the cited art. Therefore, the rejection of claim 15 should be withdrawn for at least the reason that claim 15 depends from claim 8 (and the rejection of claim 8 should be withdrawn). Moreover, *Yu* also does not disclose that an etching process is performed to reduce the thickness of the liner before a halo region is formed. That is, even combined, the two cited references do not teach the feature of claim 15.

In this regard, the novel features of claim 15 produce unexpected results and hence are nonobvious and patentable over the cited references. Accordingly, Applicant respectfully submits that claim 15 is allowable over the art of record and respectfully requests the 35 U.S.C. § 103(a) rejection of claim 15 to be reconsidered and withdrawn.

Claims 4 and 11 are rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over *Roy et al.* (US 6,777,298) in view of *Oyamatsu* (US 6,734,506). Claims 4 and 11 depend from the amended claims 1 and 8 respectively and adds further limitations thereto.

As amended claims 1 and 8 patently define over the cited art, dependent the rejections of claims 4 and 11 should be withdrawn for at least the same reasons. Moreover, *Oyamatsu* also does not teach or disclose performing an etching process to reduce the thickness of the liner before a halo region is formed, and using an etched liner as a mask to form a halo region. That is, even if combined, the two cited references do not reach the features of claims 4 and 11.

In this regard, the novel features of claims 4 and 11 produce unexpected results and hence are nonobvious and patentable over theses references. Accordingly,

Applicant respectfully submits that claims 4 and 11 are allowable over the art of record and respectfully requests the 35 U.S.C. § 103(a) rejections of claims 4 and 11 to be reconsidered and withdrawn.

### **CONCLUSION**

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested.

No fee is believed to be due in connection with this amendment and response to Office Action. If, however, any fee is believed to be due, you are hereby authorized to charge any such fee to deposit account No. 20-0778.

Respectfully submitted,

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